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PATENT ABSTRACTS OF JAPAN

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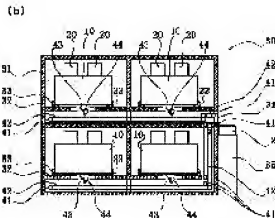
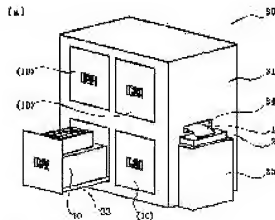
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(54) MEDICINE BAG PREPARING DEVICE

(57)Abstract:

PROBLEM TO BE SOLVED: To realize sufficient throughput with simple carrying mechanisms.

SOLUTION: A medicine bag preparing device 30 is provided with plural printers 10, the carrying mechanisms 41+42 collecting a medicine bag 1 printed by these printers 10 and a controller 35 controlling the operation of the plural printers 10 and the mechanisms 41+42. The device 30 is provided with holding means 43+44 capable of temporarily holding the medicine bag 1 so that the controller may make the plural printers 10 parallelly operate by using the means 43+44. The control of temporarily holding the medicine bag is executed at the time of the parallel operation of the printers, thereby the waiting situation of the collection of the medicine is reduced.



JAPANESE

[JP,2000-116752,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL
FIELD PRIOR ART EFFECT OF THE INVENTION
TECHNICAL PROBLEM MEANS EXAMPLE
DESCRIPTION OF DRAWINGS DRAWINGS

[Translation done.]

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- 2.**** shows the word which can not be translated.
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DETAILED DESCRIPTION

[Detailed Description of the Invention]

[0001]

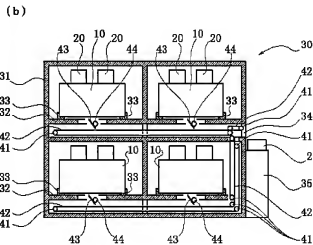
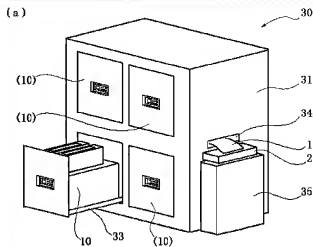
[Field of the Invention]This invention relates to envelope-for-drug preparation devices which print required information to the envelope for drug which accommodates drugs in a department of pharmacy, a dispensing pharmacy, etc., and is passed to a patient, such as an envelope-for-drug printer and an envelope-for-drug printer. While performing the printing job to the envelopes for drug a kind, and shape and size in, it is related with the art of also performing collection of an envelope for drug automatically in preparation for subsequent drugs storing operation and audit etc.

[0002]

[Description of the Prior Art]Conventionally, the envelope-for-drug printer indicated to JP,6-315511,A, the printer of the envelope for drug indicated to JP,7-2404,A, etc. are

Drawing selection

Representative draw



[Translation done.]

known as an envelope-for-drug preparation device. In order to open a pharmacist from the handwriting work of an envelope for drug, the former envelope-for-drug printer possesses two or more printers and conveyer styles, and collects the envelopes for drug printed with each printer at conveyer guard to one envelope-for-drug extraction position. On the other hand, the printer of the latter envelope for drug is made to connect in series after combining and carrying out unitization for every printer, while dividing the conveyer style so that an independent drive was possible. Printing processing of two or more kinds of envelopes for drug is carried out selectively, and it collects into one unit at a time, and sends out.

[0003]As envelope-for-drug feed units, such as a printer built into an envelope-for-drug preparation device, the address printer indicated to JP,5-49740,U, the envelope-for-drug feeder indicated to JP,10-35928,A, etc. are known. In order to realize a smooth continuous paper feed for the envelope and Hitoshi Minae who are thicker than common papers, such as a copy paper, as for the former address printer, and are hard to treat, It has the feeding guide laminated and laid in the longitudinal direction where the envelope for drug of two or more sheets is stood, and the paper presser foot which accompanies and moves to the inclination of both feeding guides, and shows an envelope for drug to the paper feed port side. In this case, it has a comparatively simple structure by using self weight falling.

[0004]On the other hand, in order that the latter envelope-for-drug feeder may prevent the error of the serial supply for the envelope for drug whose thickness is uniform and which unlike a common paper does not have it, The frame which loaded the envelope for drug of fixed number of sheets up and down, and stored it in the state where it turned sideways. It has a bottom plate which is dedicated to the bottom of this frame and pushes up an envelope for drug from the bottom, The tension mechanism which trichotomizes a bottom plate into the direction which intersects perpendicularly with the feed direction of an envelope for drug, and gives load independent of each is established, or it has become what also formed further the adjusting roller which gives the load of an opposite direction in addition to an envelope-for-drug taking-out roller.

[0005]On the other hand, by the copying machine and facsimile for a copy paper also with uniform thickness, etc., alignment housing of the paper is carried out to a removable

cassette in simple shape, and there are some which send out a paper in order from there. In that case, the box part which a cassette loads up and down where many papers are turned sideways, and stores, the mobile base plate of one sheet which pushes up the accumulation paper dedicated to the inner bottom of this box part from the bottom, the sliding plate which makes the size of a paper suit and can adjust vertical length and breadth, etc. are formed.

A body part is equipped at the time of use, turning the bottom down.

[0006]

[Problem(s) to be Solved by the Invention]However, there was nothing that carried out the cassette which carries out alignment housing of many envelopes for drug as [be / removable] to the printer body part in the printer used for an envelope-for-drug preparation device. Since some additional mechanisms must be introduced like an above-mentioned envelope-for-drug feeder from becoming difficult to use Hitoshi Minae's self weight falling used with the above-mentioned address printer for simplification etc. when an envelope for drug is stored to a cassette, It is because it seemed that the demerit becomes large rather than the merit which causes the further complication and makes it removable when it was going to make it removable. Since it was such, even when storing an envelope for drug to a box, with the printer which processes an envelope for drug unlike a copying machine etc., the limit made the drawer of the Minae housing soma possible from the printer body part.

[0007]On the other hand, since a work site's being limited to the installation place of a device and a worker's posture are also strongly restrained by device structure and a worker's burden is heavy, carrying out the directly set of Bala's envelope for drug, when supplementing an envelope-for-drug preparation device with an envelope for drug has the necessity for management. Although the pharmacist is playing an active part in the chemist's shop especially, since the woman occupies the many, the request of a reduction of incidence to the work of an envelope-for-drug supplement etc. is strong. And while to a copying machine etc., or adopting a cassette and improving workability etc. also about the printer for envelope-for-drug preparation devices so that it may be easy to do the work of an envelope-for-drug supplement etc. more than it in order to respond to this request, Even if it prepares many cassettes corresponding to various envelopes for drug, it is necessary to simplify the

structure of a cassette so that cost may be held down.
 [0008]And the advantage that the operating ratio of a printer improves [a worker's burden being eased] as a result by which it succeeds in an envelope-for-drug supplement etc. promptly is also followed on an improvement of workability, such as such an envelope-for-drug supplement. If the operating ratio of a printer improves, the operating ratio of an envelope-for-drug preparation device will also improve. In connection with the technical progress of the latest printer relation, the performance and press speed of a printer are also improving.

[0009]However, in the conventional envelope-for-drug preparation device which was mentioned above, even if each operating ratio and performance of a printer improve, it cannot necessarily be said that the throughput of the whole device is also improved. Since it is necessary to classify per a prescription unit or patient on the occasion of envelope-for-drug printing, and to collect various kinds of envelopes for drug and envelope-for-drug collection by a conveyer style is performed one by one along with the direct arrangement parts of each printer, The performance of the conveyer style which bears envelope-for-drug collection will run short relatively, and the improvement in a throughput of the whole will be suppressed.

[0010]But for conveying various envelopes for drug certainly under the limited cost restrictions, there is a limit also in a feed rate. For this reason, it is necessary to devise so that the overall efficiency of envelope-for-drug collection even still be [a bearer rate / the same] may become good. In the case as unitization of a printer and the conveyer style was carried out like the envelope-for-drug printer given in JP,7-2404,A. If an intermediate unit is pulled out to the increase in the part mark accompanying subdivision of a conveyer style, etc. becoming a cost hike factor of a conveyer style for an envelope-for-drug supplement etc., Since it stops from the conveying path before and behind that being divided to conveyance with other units, envelope-for-drug collection capability may also be falling on the contrary.

[0011]Then, it becomes a technical technical problem to aim at the rise of envelope-for-drug collection capability without being based on the rise of a bearer rate while on the assumption that the conveyer style of the simple structure by which the conveying path is continuing and following two or more sets of printers is used, with to raise the throughput of the whole device. In that the operating ratio of a printer

and improvement in performance lead to the improvement in a throughput of an envelope-for-drug preparation device promptly such improvement is not only desirable, but, Since the throughput of an envelope-for-drug preparation device improves as it is, without the operating ratio and performance of a metaphor printer causing particular cost hike even still be [it / the same], there is its value carried out even when it is independent. This invention is made in order to solve such a technical problem, and an object of an invention is to realize the envelope-for-drug preparation device which can take out sufficient throughput also with a simple conveyer style.

[0012]

[Means for Solving the Problem]About an envelope-for-drug preparation device of this invention made in order to solve such a technical problem, the composition and operation effect are explained below.

[0013]An envelope-for-drug preparation device (it is like a statement to claim 1 of the time of application) of this invention Two or more printers, In an envelope-for-drug preparation device possessing a control device which performs motion control of a conveyer (it is one or several join) style which collects envelopes for drug printed with these printers, and said two or more printers and said conveyer style, It has holding mechanism which can be held temporarily [before collecting said envelopes for drug], and said control device makes parallel operation perform to said two or more printers using said holding mechanism.

[0014]If it is in an envelope-for-drug preparation device of such composition, while each envelope for drug is printed with a respectively proper printer, after passing through holding mechanism, are collected by simple conveyer style, but. Since each printer carries out parallel operation by control of a control means in that case and an opportunity to be kept waiting for other envelope-for-drug collection of a certain printing decreases, processing efficiency in the whole printer increases.

[0015]And since control of maintenance is performed temporarily [envelope-for-drug] which used holding mechanism on the occasion of the parallel operation, even if it carries out parallel processing of the envelope-for-drug creation, each envelope for drug, A gap of operation timing with an applicable printer and a conveyer style is absorbed while holding mechanism stands by the way, and conveyance is started to each proper timing. Thereby, a throughput of envelope-for-drug processing can be raised,

without spoiling the given collection order, such as classification.

[0016]

[Embodiment of the Invention]The gestalt for carrying this out is explained about the envelope-for-drug preparation device of this invention attained by such a solving means. [A 1st embodiment] A 1st embodiment of this invention is an envelope-for-drug preparation device of the solving means mentioned above, and said control device is as follows. Namely, the means which carries out the multiple input of the printed information which said control device also performs motion control of said holding mechanism, and was classified considering a prescription, a patient, etc. as a unit, It has a means to distribute the printed information for the two or more division to said two or more printers, and a means to make momentary maintenance of an applicable envelope for drug carry out to said holding mechanism based on divisional difference.

[0017][A 2nd embodiment] a 2nd embodiment of this invention, It is the solving means and the envelope-for-drug preparation device of an embodiment which were mentioned above, said printer is separately supported by the drawer member withdrawal, and said holding mechanism is attached at said conveyer style (on direct or indirect target). In this case, since the maintenance service of a printer, the clearing work of the envelope-for-drug storage cassette to a printer, the replenishment work of the envelope for drug about a printer, etc. can carry out by pulling out an applicable printer, they become easy. And since a conveyer style and holding mechanism remain while it had been fixed to supporters, such as a case and a frame, by it irrespective of the drawer of a printer, they can be embodied with a comparatively easy structure, and also maintain the state in which conveying operation is possible, and do not bar the envelope-for-drug collection from other printers. Thereby, in addition to improvement in a throughput, facilitating of work, the simplification of a mechanism, and improvement in an operating ratio can be attained simultaneously.

[0018][A 3rd embodiment] a 3rd embodiment of this invention, Are the solving means and the envelope-for-drug preparation device of an embodiment which were mentioned above, and said printer, The envelope for drug by which alignment housing was carried out to the removable cassette is supplied to the any or all in order, they print it, said cassette turns the side or flank down, and a printer body part is equipped with it. Here, when "the above-mentioned side

or flank" stores an envelope for drug, it means the place which is a field where the edge of an envelope for drug hits. The place where the large surface and rear surface of an envelope for drug hits is called the bottom or a covering device, and is not called the side. A flank is extended from the side also including the case where it has extended to a part of bottom or covering device centering on the side. [0019] If it is in such an envelope-for-drug preparation device, one bag of envelope for drug used as a printing object is sent out at a time from a cassette in order to a printer if needed, but when you would like to change an envelope for drug to other envelopes for drug, or when a supplement is required, supply is interrupted temporarily. And when there are already other cassettes which stored the desired envelope for drug, a measure can be taken easily and promptly by exchanging cassettes. On the other hand, even when that is not right, after removing a cassette from a body part and storing a desired envelope for drug to the cassette, the measure of the cassette can be too taken easily and promptly by carrying out re mounting. And since a cassette turns a detaching part down and it is equipped with it, on the occasion of the attachment and detachment, a worker will carry out work in the conduct which lifts a cassette from a printer body part, or carries it on a printer body part. That is, an envelope for drug can be collectively treated from a top. The burden to the worker who deals with an lot of envelopes for drug by this is substantially eased compared with the case where the case where an envelope for drug is treated by Bala, and a cassette are inserted in a printer body part from width.

[0020] Inside the cassette which turned the detaching part of the side down and with which it was equipped, Since it is held after it inclined for a while and each envelope for drug has stood from it perpendicularly over a vertical plane and there are little friction with the contiguity envelope for drug of order and connection, even if it is an envelope for drug of the various shape where a square bottom, a horizontal gore, etc. were attached, it can supply one bag at a time certainly. While enjoying the merit of having made removable the cassette which carries out alignment housing of many envelopes for drug to the body part by this, the demerit accompanying loading an envelope for drug and storing to a box is avoided. Therefore, according to this embodiment, the envelope-for-drug preparation device the throughput excelled [preparation device] also in workability, such as an envelope-for-drug supplement to each printer, in addition

to the high thing is realizable.

[0021][A 4th embodiment] A 4th embodiment of this invention is characterized by comprising:

The 1st movable plate with which it is the envelope-for-drug preparation device of a 3rd embodiment mentioned above, and said cassette was dedicated to the inner bottom so that rocking etc. were possible.

The 2nd movable plate that is supported by this 1st movable plate, maintains a vertical state or a fixed inclining state, and can move.

Since the mechanism which receives an envelope for drug within the cassette for the printers is embodied by the combination of a plate called the 1st and 2nd movable plate if it is in such an envelope-for-drug preparation device, the additional mechanism in the cassette equivalent to a tension mechanism etc. will become simple. And yet, since inclination of the 2nd movable plate that receives an envelope for drug is constant and the state of an envelope for drug where the turn sent out came is stable always even if the number of storage of an envelope for drug changes, supply of an envelope for drug is always ensured. Thereby, the structure of the cassette itself can be simplified, without spoiling the supply function of an envelope for drug. Since it inclines even if the 2nd movable plate drives which the part, and a fixed state is maintained and the restrictions accompanying the design of the drive mechanism formed in a body part for a drive of that are eased, it becomes possible to move near the detaching part and to also make the drive mechanism simple do. Since it is not necessary to arrange an excessive structure around a cassette by this, in addition to simplifications, such as a mechanism in a body part, being attained, attachment and detachment of a cassette do not have an obstacle, either and become still easier. Therefore, according to this embodiment, the printer of the envelope-for-drug preparation device excellent in workability, such as an envelope-for-drug supplement, is realizable with a simple structure.

[0022][A 5th embodiment] a 5th embodiment of this invention, Are the envelope-for-drug preparation device of a 3rd embodiment mentioned above, and said cassette adds to the 1st movable plate dedicated to the inner bottom so that rocking etc. were possible, It is supported by this 1st movable plate, and has the 2nd movable plate that goes together and moves, and said 2nd movable plate bends along the feed direction of an envelope for drug.

[0023]Since the mechanism which receives an envelope for

drug within the cassette for the printers is embodied by the combination of a plate called the 1st and 2nd movable plate if it is in such an envelope-for-drug preparation device, the additional mechanism in the cassette equivalent to a tension mechanism etc. will become simple. And yet also as it being impossible to use self weight falling positively, since it is set after the envelope for drug has stood, Even if it avoids the load of the envelope for drug piled up upwards accumulating, and starting a lower envelope for drug unevenly, thickness is uniform and it is an envelope for drug which is not, by the thing of the grade which adopts the proper plate which the 2nd movable plate that receives an envelope for drug was made to bend according to the Minae shape etc. Even if the number of storage of an envelope for drug changes, supply of an envelope for drug is ensured. Thereby, the structure of the cassette itself can be simplified, without spoiling the supply function of an envelope for drug.

[0024]In order the shape of an envelope for drug is various and to make all them suit, the 2nd movable plate that receives an envelope for drug can also share the 1st movable plate that is directly attached to a cassette and is attached that ** can be rocked, although the thing of various a large number is needed. Then, since the restrictions accompanying the design of the drive mechanism formed in a body part for those drives are eased, it becomes possible to move near the detaching part and to also make the drive mechanism simple do. Since it is not necessary to arrange an excessive structure around a cassette by this, in addition to simplifications, such as a mechanism in a printer body part, being attained, attachment and detachment of a cassette do not have an obstacle, either and become still easier. Therefore, according to this embodiment, the envelope-for-drug preparation device excellent in workability, such as an envelope-for-drug supplement, is realizable with a simple structure.

[0025][A 6th embodiment] A 6th embodiment of this invention is the solving means and the envelope-for-drug preparation device of an embodiment which were mentioned above, and is that said 2nd movable plate hangs on said 1st movable plate, and said 1st movable plate and said 2nd movable plate connect it. In this case, since exchange of the 2nd movable plate that receives an envelope for drug can be performed simply, about various kinds of envelopes for drug, it becomes easily possible to share the same cassette by the thing of the 2nd movable plate for which elegance is

exchanged in part, and the flexibility of a cassette increases.
 [0026][A 7th embodiment] A 7th embodiment of this invention is the solving means and the envelope-for-drug preparation device of an embodiment which were mentioned above, and the side or the flank which said cassette counters with said detaching part is opened wide. Although size also reaches variously, even if an envelope for drug is an envelope for drug longer than a cassette, it becomes possible to store to a cassette by making a part protrude from a releasing part. And since it is held after the envelope for drug has stood and it is rare to bend over the contiguity envelope for drug of order, or to be caught even if an part of envelope for drug has overflowed the cassette upwards, supply of an envelope for drug is ensured.

[0027]

[The 1st example] About the envelope-for-drug printer as the 1st example of the envelope-for-drug preparation device of this invention, a drawing is quoted and the concrete composition is explained. (a) is an appearance perspective view and (b) of drawing 1 is a vertical mimetic diagram. Drawing 2 is an enlarged drawing about the holding mechanism circumference, and drawing 3 is a block diagram of the control means relation.

[0028]As for this envelope-for-drug printer 30, (referring to drawing 1) 10 (four sets of for example, printers) is carried in the case 31. The printer of these plurality is installed via the slide rail 33 on the shelf board 32 which each constructed horizontally across the case 31, the frame which is not illustrated, etc. for facilitating of a maintenance service or envelope-for-drug replenishment work, etc. while arranging it vertically and horizontally and storing it in the case 31. And if the portion divided among the front faces of the case 31 corresponding to each printer 10 is pulled, it will be supported by the slide rail 33 and the printer 10 will be pulled out smoothly (refer to the printer of the lower left in drawing 1 (a)). Thus, two or more printers 10 were being separately supported withdrawal by the drawer member.

[0029]The transportation belt 42 driven with (the drawing 1 (b) reference) and the transportation roller 41 is installed in the shelf board 32 bottom within the case 31. The transportation belt 42 is installed by a level thing and the vertical thing, and before long the more level one, It becomes about a discharge envelope for drug in the lower part of the printer 10 of the two upper rows, and will become possible [a receipt] in which from the thing in

which a receipt is possible about a discharge envelope for drug in the lower part of the printer 10 of the two lower berths, and the vertical thing is connecting between those level transportation belts 42. And the conveying path by the level transportation belt 42 of the upper row is turned to the taking-out mouth 34 of the case 31 through the lower part of each printer 10 of the upper row. After the conveying path by the level transportation belt 42 of the lower berth passes the lower part of each printer 10 of the lower berth, it is too turned to the taking-out mouth 34 of the case 31 via the vertical transportation belt 42. Thereby, these transportation belts 42 and transportation rollers 41 are the conveyer styles prolonged horizontally or vertically [the installation range of two or more printers], and are collecting the envelopes for drug printed with each printer.

[0030](The drawing 1 (b) reference), the transfer guides 43, and 1 set of transfer roller [4 sets of] 44 are installed at a time in the shelf board 32 in the case 31 in total corresponding to each printer 10. The place of the penetrating port formed between the envelope-for-drug outlet 16 which (referred to [drawing 2]) each transfer roller 44 grade, and was formed in the printer 10, and which is mentioned later, and the transportation belt 42 which passes along the lower part is equipped. It receives inserting the envelope for drug 1 discharged by the envelope-for-drug delivery mechanism 15 from the printer 10 with the transfer guides 43 and the transfer roller 44. The inserted envelope for drug 1 will be sent in on the level transportation belt 42 for envelope-for-drug collection as it is promptly, if the transfer roller 44 continues rotating, but if the transfer roller 44 interrupts rotation, it will halt the period between the transfer guides 43 and the transfer roller 44.

[0031] In order to detect the envelope-for-drug discharge, the photosensor 45 is also installed immediately on the transfer roller 44, but. It is being fixed in the case 31 with the transportation belt 42 grade, without going together, even if it is attached in the shelf board 32 and the printer 10 is pulled out like the transfer guides 43 and the transfer roller 44. Thereby, the transfer roller 44 and the transfer guides 43 are the holding mechanisms indirectly attached to the conveyer style 41+42, and each holds them temporarily [before collecting applicable envelopes for drug] while inserting in the conveyer style 41+42 and each of the printer 10 and providing more than one.

[0032] To serve also as the stand which carries the tray 2 accommodated in response to the envelope for drug 1 taken

out from the taking-out mouth 34, the main controller 35 adjoins the case 31 and is formed (refer to [drawing 1](#)). This main controller 35 is connected also to each printer 10 grade via the proper interface which is not illustrated while consisting of a small computer system of a personal computer etc. and being connected with the host computer 50 via LAN etc. so that communication is possible.

[0033]With the controller 18, the serial transmission line, etc. which each printer 10 mentions later, it is specifically (refer to [drawing 3](#)) connected so that communication is possible, and it is sending and receiving a print command and status reports, and operation of each printer 10 is controlled. While inputting the detecting signal of the photosensor 45, it is connected with the motor 44a which drives rotation of the transfer roller 44, and the on-off control action is controlled. It is connected also with the motor 41a which drives rotation of the transportation roller 41, and the on-off control action is also controlled. And those connection is made each controller 18 and every roller 44 grade so that control which became independent to the printer 10 or each unit of the conveyer style 41+42 and also the holding mechanism 43+44 can be performed easily. Thereby, the main controller 35 serves as two or more printers, a conveyer style, and a control device that performs motion control of holding mechanism.

[0034]In order that the main controller 35 may perform each motion control by (refer to [drawing 3](#)) and its program manipulation, the assignment **** queuing 35a, the precedence assignment routine 35b memorized in program areas, such as ROM, and the discharge synchronous control routine 35c similarly memorized in the program area are installed in data areas, such as RAM. If the printed information classified considering a prescription, a patient, etc. as a unit is transmitted from the host computer 50, this main controller 35 will input it one after another, will put the printed information of these plurality in order according to entry sequenced or a proper priority, and will hold it to the queuing 35a.

[0035]The precedence assignment routine 35b takes out printed information from a following thing suitably, when the envelope for drug 1 which was suitable for order or top printed information from the head of the queuing 35a is set to neither of the printers 10, Processing which distributes the printed information for the two or more division to two or more printers is performed by assigning the printed information and print command one after another to the

vacant printer 10. While the discharge synchronous control routine 35c checks completion of printing processing with each printer 10 based on the printed information assigned by the precedence assignment routine 35b, Detection of the envelope-for-drug discharge from the printer 10 by the photosensor 45 is faced so that the envelope for drug of different classification based on divisional difference may not be mixed, When the envelope for drug 1 of precedence classification is located after the envelope for drug 1 of succession classification on a conveying path, processing which passes the thing of precedence classification previously is performed by making momentary maintenance of an applicable envelope for drug perform on the transfer guides 43 and the transfer roller 44 applicable to the envelope for drug 1 of succession classification. Thereby, the main controller 35 makes parallel operation perform to two or more printers using the holding mechanism 43+44. [0036] Here, the composition is explained in full detail about the printer 10 used for the envelope-for-drug printer 30. (a) is an appearance perspective view about the printer of the simple substance in which drawing 4 equipped with the cassette, and (b) is a vertical mimetic diagram. Drawing 5 is a figure in which (a) is a deployment perspective view of the important section, (b) and (c) are the figures showing the storage condition of the envelope for drug to a cassette, and (d) and (e) show the mounting situation of the cassette to a body part about the cassette of them. Drawing 6 (a) is a perspective view of the movable plate with which it is equipped in the cassette. (a) is an outline view with a square bottom of an envelope for drug, (b) of drawing 7 is a perspective view of the 2nd suitable movable plate for the kind of envelope for drug, drawing 8 is the outline view of an envelope for drug in which (a) had a horizontal gore, and (b) is a perspective view of the suitable movable plate for the kind of envelope for drug. Here, being conscious of the cassette 20 being removable and exchangeable, the printer 10 is called the printer body part 10. [0037] this printer body part 10 can equip with the cassette 20 which stores the envelope for drug 1 (refer to drawing 4) and for printing, and is supplied to the printer body part 10 in order to two pieces, therefore, The two openings 13 which insert the cassette 20 in (the drawing 4 (a) reference) and the upper surface are formed in the case 11 of the printer body part 10. The proper navigational panel 12 grade is also provided in legible places, such as a front face,

among the cases 11 of the printer body part 10.
 [0038](The drawing 4 (b) reference), the ** implement 14, and the switch 14a are formed in the inside of the printer body part 10 every opening 13, The envelope-for-drug delivery mechanism 15 is formed in the middle lower part of the double door mouth 13, as the print head 17 is the envelope-for-drug delivery mechanism 15, it is faced and provided, and it is provided in the space where the controller 18 remained. Although the graphic display was omitted like a holding frame, fastening bolt, etc., The stopper stopped in the place where the front face 22 (side) of the cassette 20 inserted directly under the opening 13 from the opening 13 contacted the switch 14a, A guide, still more proper locking mechanism, lock release means which regulate the periphery (flank) of the front face 22 of the cassette 20 so that the cassette 20 with which it was equipped may not shake are established if needed.

[0039]The ** implement 14 consists of a member with little friction, such as a roller in which a rod or rotation with a smooth tip part is free, and is supported by the drive mechanism which is not illustrated so that it can move to the inside and outside of the cassette 20 with which the opening 13 was equipped. And according to control of the controller 18 which detected the existence of the cassette 20 with the switch 14a, if equipped with the cassette 20, it will advance, and when the cassette 20 is removed or the lock is canceled, it retreats. The ** implement 14 takes out almost fixed energizing force at the time of penetration.

[0040]The roller 15a formed in the place where the envelope-for-drug delivery mechanism 15 is involved in the cassette 20 from the (drawing 4 (b) reference) and opposite side of the ** implement 14, It has the guide 15e and the roller 15f which were formed between the guide 15b and the roller 15c which were formed in the middle lower part of both the rollers 15a, the platen 15d which countered the print head 17 and was provided in the lower part, and them and the envelope-for-drug outlet 16. These rollers and platens rotate according to control of the controller 18, . The envelope for drug 1 pulled out from the cassette 20 by rotation of the roller 15a should pass the place of the print head 17. It is discharged from the envelope-for-drug outlet 16, and is sent out on the level transportation belt 42 of the lower part via transfer guides 43 and transfer roller 44 of it directly under (also see drawing 2).

[0041]The controller 18 consists of (drawing 4 (b)

reference), a microprocessor, etc., and by the program manipulation. the prescription information from the navigational panel 12 or the main controller 35 -- or, while inputting envelope-for-drug printed information, such as a name of patient and a chemical name, at least, If processing is started according to the directions, will choose the proper roller 15a in any, and it will be operated, The print driver 17a is controlled by proper timing, and a name of patient, a chemical name, a required dosage, direction for use by the print head 17, etc. are made to print to the envelope for drug 1 sent to the place of the print head 17 by it.

[0042]Although the cassette 20 (is drawing 5 (a) referred to), the covering device 25 is attached in the box part 21 and all consist of a light plastic, the metal plate etc. which are not illustrated are combined and proper reinforcement is made. The box part 21 consists of the bottom 21a, and the 3 sides 22, i.e., the front face, 21 d of right faces and 21 g of left surfaces surrounding the surroundings of it, and the upper part where it is equipped with the covering device 25 is opened wide.

[0043]The round hole 21b and the round hole 21c for pivot wearing are formed in the place of back distant from the front face 22 at 21d of right faces and 21g of left surfaces of the box part 21, and the handle 24 is also formed near it. While 21 f of notches for ** implement 14 penetration are formed in the place by the side of the front face 22 at the bottom 21a of the box part 21, the oblong hole 21e is also formed in the both sides.

[0044]When size of the box part 21 is made slightly larger than the biggest thing among the various envelopes for drug 1 dealt with by the printer body part 10 and the envelope for drug 1 smaller than it is stored, The position of the same sliding plate as usual that are not illustrated is adjusted, and storage space is fitted to the size of the envelope for drug 1. Thereby, the cassette 20 carried out alignment housing of the envelope for drug 1 of various a large number, and it has dealt in it.

[0045]While the notch 25c for the rollers 15a is formed in the place which the covering device 25 has the almost same size as (the drawing 5 (a) reference) and the bottom 21a, and counters with 21 f of notches of the box part 21 ahead, The round hole 25a is formed in the place which corresponds to the round hole 21b of the box part 21 behind, and the projecting part 25b is also further formed near it. And the covering device 25 will be behind supported pivotally by the box part 21, and the front-face 22 side of the box part 21

will be opened [if the round hole 25a and the round hole 21b are piled up and it equips with a pivot] and closed greatly (refer to [drawing 5](#) (b) and (c)). The front end of the covering device 25 retreats for a while from the front face 22 of the box part 21, or an opposing part with the front face 22 has failed to be deleted a little, and the crevice which one bag of envelope for drug 1 can pass is formed. Thereby, the cassette 20 has sent out the stored envelope for drug 1 sequentially from the covering device 25 side.

[0046]When the cassette 20 shuts the covering device 25, the projecting part 25b laps with the handle 24 of the box part 21 exactly. And if the handle 24 is held by hand with the projecting part 25b and the cassette 20 is lifted, the front face 22 will come by the dignity caudad automatically. The size of the opening 13 formed in the upper surface of the printer body part 10 as mentioned above on the other hand is decided that the cassette 20 is inserted smoothly among the cassettes 20 to which the covering device 25 was shut corresponding to the surrounding shape of the front face 22. Thereby, among the sides 22, 21d, and 21g, by making the place of the front face 22 into a detaching part, it is removable to the printer body part 10, and moreover, the cassette 20 turned the front face 22 down, and it is equipped with it.

[0047]Although the front face 22, 21 d of right faces, and 21 g of left surfaces exist among the sides of the box part 21, the front face 22 and the rear face 23, i.e., a back opening, which counters are missing (refer to [drawing 5](#) (a)). And when storing the envelope for drug 1 longer than it to the cassette 20, an part of envelope for drug 1 is made to protrude from the back opening 23, and it is performed (refer to [drawing 5](#) (b) and (c)). Thereby, the side (23) in which the cassette 20 countered with a detaching part (22) was opened wide.

[0048]Although various movable plates are introduced into the box part 21 of the cassette 20 according to the shape of the envelope for drug 1 to store, three typical kinds are described hereafter. It having been suitable for the envelope for drug 1 with the square bottom 1a having been shown in [drawing 6](#) being used for the comparatively simple envelope for drug 1 before long, and having been shown in [drawing 7](#), and having been shown in [drawing 8](#) is used for the envelope for drug 1 which had the horizontal gore 1b in both sides.

[0049]First, three sheets of the rotor plate 27 and the

interlock plate 28 (the 1st movable plate), and the envelope-for-drug supporting plate 29 (the 2nd movable plate) combine the movable plate shown in drawing 6 (a), and it is used. Even if all are thin, they consist of a rigid metal plate etc., and they are formed by punching processing etc. The rotor plate 27 is supported pivotally within the box part 21 by the pivot with which it was equipped there so that congruence direction rotation is possible, while the round hole 27a corresponding to the round hole 21b of the box part 21 is formed. The mating part 27b of shoulder shape is formed in the pars intermedia of the rotor plate 27, and 27 d of oblong holes are formed in the necklike tip part 27c prolonged in this side.

[0050] Although the claw part 28a which can fit the interlock plate 28 over the oblong hole 21e of the box part 21 is formed in a near side, while the place of the claw part 28a suits the board thickness of the bottom 21a of the box part 21 and is bent, the level difference larger than the oblong hole 21e is formed immediately behind that. Thereby, the claw part 28a hangs the interlock plate 28 on the oblong hole 21e, and it will be in the state in which congruence direction rotation is possible from on the bottom 21a by a certain within the limits centering on there. Between both the claw parts 28a turns off and lacks the interlock plate 28, and when the tip part 27c of the rotor plate 27 is loosely inserted there, the mating part 28b of the base carries out mating of it to the tip part 27c of the rotor plate 27. The smooth tip part 28c is formed behind the interlock plate 28.

[0051] The envelope-for-drug supporting plate 29 is formed so that the remaining tip parts 29b may rise slightly, while the claw part 29a which can be inserted in 27 d of oblong holes of the rotor plate 27 is formed in a near side, but it has become flat with as, covering it over the rear part 29d from the pars intermedia 29c. While an unnecessary portion is cut off for a weight saving etc., the hole for attachment etc. of the sliding plate which is not illustrated are formed suitably. Since it bends and the claw part 29a is formed so that it may project below, the envelope-for-drug supporting plate 29 will be hung there if the claw part 29a is inserted in 27 d of oblong holes, and is supported by the rotor plate 27 by a certain within the limits from on the rotor plate 27 centering on there in the state in which congruence direction rotation is possible. Thereby, the rotor plate 27 and the envelope-for-drug supporting plate 29 are that the envelope-for-drug supporting plate 29 (the 2nd movable plate) hangs on the rotor plate 27 (the 1st movable plate), and the 1st movable

plate and the 2nd movable plate have connected them.

[0052]When installing these movable plates 27-29 in the cassette 20, they are carried in piles on the bottom 21a of the box part 21. That is, a pivot is inserted in the round hole 27a of the rotor plate 27, and the round hole 21c of the box part 21, and the claw part 28a of the interlock plate 28 is inserted in the oblong hole 21e of the box part 21, and the claw part 29a of the envelope-for-drug supporting plate 29 is further inserted in 27 d of oblong holes of the rotor plate 27 from on them. And in the state, if the rotor plate 27 is rotated, the mating part 28b will be pushed by the mating part 27b of the rotor plate 27, and the interlock plate 28 will also rotate by it. The rear part 29d is also pushed on the tip part 28c of the interlock plate 28, and moves the envelope-for-drug supporting plate 29 at the same time the claw part 29a moves with movement which is 27d of oblong holes of the rotor plate 27.

[0053]In that case, the movement magnitude of the claw part 29a or the tip part 29b and the movement magnitude of the rear part 29d become in general the same. The position of the round hole 27a, the mating part 27b and 27 d of oblong holes, the claw part 28a, the mating part 28b, the tip part 28c, and the claw part 29a is defined such. Then, the envelope-for-drug supporting plate 29 will move similarly with a perpendicular state, if a state in general parallel to the bottom 21a of the box part 21 is maintained, it moves and the bottom 21a is perpendicularly set, even if the rotor plate 27 rotates and moves (refer to [drawing 6 \(b\) - \(d\)](#)). Thereby, the rotor plate 27 turns into the 1st movable plate dedicated to the inner bottom of the cassette 20 with the interlock plate 28, and the envelope-for-drug supporting plate 29 is the 2nd movable plate that is supported by the 1st movable plate, maintains a vertical state mostly, and can move.

[0054]Next, although the envelope-for-drug supporting plate 29 shown in [drawing 7 \(b\)](#) is the same as the envelope-for-drug supporting plate 29 of [drawing 6 \(a\)](#) mentioned above as a basic shape before modification, it differs in that the portion of the rear part 29d is bent in the direction which receives the upper part 1, i.e., an envelope for drug. And when the envelope for drug 1 shown in [drawing 7 \(a\)](#) made the square bottom 1a the front-face 22 side of the box part 21, and was stored by the cassette 20 and a thick place square-bottom [1a] is received by the tip part 29b, The thin place to which it comes for the back opening 23 side is also fully forced on the covering device 25 side by the rear part

29d (refer to [drawing 7](#) (c) and (d)). Thereby, this envelope-for-drug supporting plate 29 is bent along the feed direction of an envelope for drug, and is the 2nd movable plate that is supported by the rotor plate 27 and the interlock plate 28, maintains a partial vertical state and a partial fixed inclining state, and can move.

[0055] Finally, although the envelope-for-drug supporting plate 29 shown in [drawing 8](#) (b) is the same as the envelope-for-drug supporting plate 29 of [drawing 6](#) (a) too mentioned above as a basic shape before modification, While the portion of the pars intermedia 29c is bent in the direction which receives the upper part 1, i.e., an envelope for drug, the rear parts 29d differ in that it is returned to the opposite direction. When using this envelope-for-drug supporting plate 29, the interlock plate 28 is removed, and it is set so that the envelope-for-drug supporting plate 29 may always ride on the rotor plate 27. And when the envelope for drug 1 shown in [drawing 8](#) (a) made one horizontal gore 1b the front-face 22 side of the box part 21, and was stored by the cassette 20 and the place of the thick horizontal gore 1b is received by the tip part 29b, While fully forcing a middle thin place on the covering device 25 side in the pars intermedia 29c which projected, the horizontal gore 1b by the side of the back opening 23 is lightly received by the rear part 29d (refer to [drawing 8](#) (c) and (d)). Thereby, this envelope-for-drug supporting plate 29 is bent along the feed direction of an envelope for drug, and is the 2nd movable plate that accompanies to the rotor plate 27 and moves.

[0056] About the envelope-for-drug printer 30 of such composition, a drawing is quoted and the operating mode and operation are explained. First, the situation etc. which describe the simple substance operation about the printer 10 used for the envelope-for-drug printer 30, etc. next in which two or more printers 10 carry out parallel operation about overall operation of the envelope-for-drug printer 30, etc. are described.

[0057] First, it is a figure in which, as for [drawing 5](#), (b) and (c) show the storage condition of the envelope for drug to a cassette about the printer 10 of a simple substance, and (d) and (e) are the figures showing the mounting situation of the cassette to a body part. [Drawing 6](#) (b) - (d) is a figure showing the operating state. [Drawing 7](#) (c) and (d) is a figure showing the operating state about the suitable movable plate for an envelope for drug with a square bottom, and [drawing 8](#) is a figure showing the operating

state about the suitable movable plate for an envelope for drug with a horizontal gore.

[0058] Although many cassettes 20 and envelope-for-drug supporting plates 29 are so useful that there are, they are restrained from viewpoints of a manufacturing cost, storage cost, etc. Hereafter, a situation when performing printing processing is described to the simple-shaped envelope for drug 1, the attached envelope for drug 1 of the square bottom 1a, and the envelope for drug 1 to which the horizontal gore 1b was attached using the two cassettes 20 and three kinds of envelope-for-drug supporting plates 29. The printer body part 10 is in the state where it can operate, and if equipped with the cassette 20, it shall start printing processing at any time.

[0059] And one cassette 20 is equipped with the covering device 25, and also it is made to equip also with the rotor plate 27 of drawing 6 (a), the interlock plate 28, and the envelope-for-drug supporting plate 29, and assembles to simple shape envelopes for drug. Positioning of the sliding plate, etc. are performed if needed. And the covering device 25 is opened in the state where the bottom 21a of the box part 21 was turned down, and the applicable envelope for drug 1 is loaded on the envelope-for-drug supporting plate 29 from a top (refer to drawing 5 (b)). The end of the envelope for drug 1 which has not gone into the cassette 20 is made to protrude from the back opening 23 in that case. Since the envelope for drug 1 is put in from the large place where there is nothing at since the envelope for drug 1 is inserted not only from the ability to carry out but from the back opening 23 at arbitrary places, such as a working table, and the covering device 25 opened the cassette 20, such work can be done comfortably.

[0060] And the covering device 25 is shut (refer to drawing 5 (c)), the handle 24 is held, the cassette 20 is lifted, and it carries to up to the printer body part 10, and the notch 25c checks direction so that 21 f of notches may come to the ** implement 14 side by the roller 15a side, and it inserts the place of the front face 22 in the opening 13 (refer to drawing 5 (d)). If the cassette 20 is firmly inserted in the printer body part 10, the switch 14a operates, and according to this, the ** implement 14 will advance into the cassette 20, and will energize the rotor plate 27 to the roller 15a side (refer to drawing 5 (e)). In this way, the preparation which supplies the simple-shaped envelope for drug 1 towards the printer body part 10 from one cassette 20 is completed.

[0061]The cassette 20 of another side is equipped with the covering device 25, and also it is made to equip also with the rotor plate 27 of drawing 6 (a), and the envelope-for-drug supporting plate 29 of drawing 8 (b), and assembles to envelopes for drug with a horizontal gore. Positioning of the sliding plate, etc. are performed also to this if needed. And the envelope for drug 1 is stored to the cassette 20 the same with having mentioned above. In that case, as the horizontal gore 1b comes to the front-face 22 side, it loads the applicable envelope for drug 1 on the envelope-for-drug supporting plate 29. And the covering device 25 is shut and the remaining openings 13 of the printer body part 10 are equipped with the cassette 20 the same with having mentioned above too. If it does so, also about the cassette 20, the switch 14a will operate, the ** implement 14 will advance, and the rotor plate 27 will be energized to the roller 15a side. In this way, the preparation which supplies the envelope for drug 1 with a horizontal gore towards the printer body part 10 from the cassette 20 of another side is also completed (refer to drawing 4).

[0062]If navigational panel 12 grade is operated or the printing operation of an envelope-for-drug printer is made to start with directions of the main controller 35 in the place where it was [these] ready, a proper envelope for drug will be chosen according to the information on the prescription inputted into the controller 18, etc. And if the simple-shaped envelope for drug 1 is chosen, the roller 15a corresponding to the cassette 20 which has stored it will rotate. Only one bag is sent into the envelope-for-drug delivery mechanism 15 from the cassette 20, and the desired envelope for drug 1 is discharged from the envelope-for-drug outlet 16, after [the print head 17] a name of patient, a chemical name, etc. are printed by the way. When the envelope for drug 1 with a horizontal gore is chosen, the roller 15a of another side operates, one bag of desired envelope for drug 1 is sent into the envelope-for-drug delivery mechanism 15 from the cassette of another side, and printing and discharge are made similarly. And whenever prescription data are inputted, such operation is repeated, one desired envelope for drug after another is supplied, and required printing is made.

[0063]In this way, if the envelope for drug 1 of a large number stored by the cassette 20 begins to send and appear one bag at a time in the printer body part 10 in order, the number of sheets of the envelope for drug 1 stored by the cassette 20 will become fewer. And if in the case of the

envelope for drug 1 of simple shape (refer to drawing 6 (b) - (d)) the number of sheets of the envelope for drug 1 decreases and those thickness becomes thin, only the part which became thin will be pushed on the ** implement 14, and the envelope-for-drug supporting plate 29 will move it. Since the envelope-for-drug supporting plate 29 moves to the covering device 25 side with a state almost parallel to the bottom 21a and the covering device 25 in that case, irrespective of some of number of sheets of other envelopes for drug 1, the envelope for drug 1 nearest to the covering device 25, i.e., the envelope for drug in front of supply, accompanies the covering device 25 mostly, and it will be in a straight state. Then, the envelope for drug 1 of simple shape is always supplied certainly [a head / one bag].

[0064] If the envelope-for-drug supporting plate 29 carried out parallel translation only of the part to which in the case of the envelope for drug 1 with a horizontal gore (refer to drawing 8 (c) and (d)) the number of sheets of the envelope for drug 1 decreased, and those thickness became thin, Although between nosing, such as the pars intermedia 29c, and the covering devices 25 narrows suddenly and the envelope for drug 1 may be pressed down strongly more than needed, since there is no interlock plate 28, Since it does not become so but the envelope-for-drug supporting plate 29 also rotates with rotation of the rotor plate 27, compared with movement of the tip part 29b which pushes the horizontal gore 1b, nosing, such as the pars intermedia 29c, will not move only the half extent. Then, also in this case, irrespective of some of number of sheets of other envelopes for drug 1, the envelope for drug 1 nearest to the covering device 25 accompanies the covering device 25 mostly, and will be in a straight state. And the envelope for drug 1 with a horizontal gore is also always supplied certainly [a head / one bag].

[0065] In this way, when envelope-for-drug supply is performed one after another and which cassette 20 becomes empty, the supplement of an envelope for drug is needed. In that case, the cassette 20 which became empty holds and raises the handle 24, removes it from the opening 13 of the printer body part 10, is carried to places, such as a proper working table, and as mentioned above there, it stores a supplement envelope for drug with an easy posture. And as it mentioned above too, the cassette is returned to the printer body part 10, and re mounting is carried out. In the meantime, in the printer body part 10, continuation of processing is aimed at in response to envelope-for-drug

supply from another possible cassette 20.

[0066]On the other hand, are not the supplement of an envelope for drug, when the envelope for drug of another kind is needed, and an envelope for drug with a square bottom needs to be supplied, for example, if there is the surplus cassette 20, it is convenient but to dedicate the envelope-for-drug supporting plate 29 and the applicable envelope for drug 1 of drawing 7 (b) to it, and to perform cassette exchange, and. Since there are only the two cassettes 20, it will remove any they are from the printer body part 10, and will use. For example, the cassette 20 of the direction where the envelope for drug 1 of simple shape is stored is removed. And the envelope for drug 1 is removed from the inside, and as the envelope-for-drug supporting plate 29 is turned for a while, it is lifted. Then, the envelope-for-drug supporting plate 29 currently hung separates simply. And it has the envelope-for-drug supporting plate 29 of drawing 7 (b) suitable for the envelope for drug 1 with a square bottom, and the claw part 29a is inserted in 27 d of oblong holes of the rotor plate 27 which remains in the cassette 20. Now, since this cassette 20 became a thing for envelopes for drug with a square bottom from the thing for simple shape envelopes for drug, as the envelope for drug 1 with the square bottom 1a is stored to that cassette 20 and it mentioned it above, it equips the printer body part 10 with that cassette again.

[0067]And the envelope for drug 1 nearest to (drawing 7 (c) (d) reference) and the covering device 25 accompanies the covering device 25 also in this case, it is maintained at an almost straight state, and the envelope for drug 1 with the square bottom 1a is also always supplied certainly [a head / one bag]. In this way, not only the replenishment work of an envelope for drug but Hitoshi Minae's clearing work is also performed promptly and easily.

[0068]Next, the situation etc. in which two or more printers 10 carry out parallel operation are described about the overall operating mode and operation of the envelope-for-drug printer 30. Drawing 1 (a) is shown and the state where the printer 10 was pulled out on the occasion of a supplement and exchange of the envelope for drug 1 drawing 2 (b) - (d), The place where the envelope for drug 1 discharged from the printer 10 stands by temporarily at, and lets other envelopes for drug 1 on the ***** transportation belt 42 go past with the transfer guides 43 and the transfer roller 44 is shown.

[0069] Various kinds of envelopes for drug 1 from which shape and size differ are set to each printer 10 carried in the envelope-for-drug printer 30. In that case, the frequently-used envelope for drug 1 is set also to two or more proper cassette 20 and two or more printers 10 so that firm gas may be possible. As mentioned above, 20 units of cassettes perform the set of the envelope for drug 1 of these various kinds, but the work pulls out the applicable printer 10 ahead of the envelope-for-drug printer 30, and it is in the state where the upper part was opened wide, and it is performed from a top (refer to [drawing 1 \(a\)](#)). In this way, envelope-for-drug replenishment work etc. can be comfortably performed also to the printer 10 stored in the envelope-for-drug printer 30.

[0070] If the printed information classified considering the prescription etc. as a unit is transmitted to the main controller 35 one after another from the host computer 50 where the envelope for drug 1 required for each printer 10 is set, those printed information will be tied to the queuing 35a by the main controller 35. And printed information exists in the queuing 35a, and it is vacant any of the printer 10 they are, and if the envelope for drug 1 of the printer 10 conforms to the printed information, **, Proper printed information is taken out from the queuing 35a by processing of the precedence assignment routine 35b, and is sent out to the suitable printer 10 by it. If the precedence assignment routine 35b transmits sent out printed information to the discharge synchronous control routine 35c and it is notified, it will leave processing of after that about the printed information to the discharge synchronous control routine 35c, and it will shift from it to processing of other printed information connected to the queuing 35a. The discharge synchronous control routine 35c which received the notice operates the transportation roller 41 altogether. In this way, in the state where the envelopes for drug 1 by the transportation belt 42 can be collected at any time, without waiting for the processing completion to previous instructions, the print command of an envelope for drug precedes as much as possible, and is sent to each printer 10.

[0071] In each printer 10 which received the print command, while the applicable envelope for drug 1 succeeds in printing as mentioned above, the envelope for drug 1 is discharged from the envelope-for-drug outlet 16 by the envelope-for-drug delivery mechanism 15. If the envelope for drug 1 under the discharge is detected with the photosensor 45 in that case (refer to [drawing 2 \(b\)](#)),

according to control of the discharge synchronous control routine 35c, the transfer roller [directly under] 44 of it will drive, and the envelope for drug 1 will be received with the transfer guides 43 and the transfer roller 44. And even if the envelope for drug 1 is taken out as it is by the discharge synchronous control routine 35c, when it is judged by it that it does not mix with the thing of other classification, the envelope for drug 1 is promptly transferred as it is to the transportation belt 42 by it, and is conveyed towards the tray 2 with the transportation belt 42.

[0072]On the other hand, when the envelope for drug 1 was taken out as it is by the discharge synchronous control routine 35c and it is judged by it that it mixes with the envelope for drug 1 of other classification back located on a conveying path, rotation of the applicable transfer roller 44 stops by it in the place which received the envelope for drug 1 (refer to drawing 2 (c)). And the envelope for drug 1 is made to stand by there by the discharge synchronous control routine 35c until the thing of other classification passes the lower part of the envelope for drug 1. And after passage of the thing of other classification is checked, the transfer roller 44 drives again, and the envelope for drug 1 is transferred to the transportation belt 42, and is conveyed towards the tray 2 with the transportation belt 42 (refer to drawing 2 (d)). In this way, two or more printers 10 carry out parallel operation so that the envelope for drug 1 of different classification may not blend by making the envelope for drug 1 stand by suitably using the holding mechanism 43 +44, even if it does not stop the conveyer style 41+42.

[0073]Since the supplement of an envelope for drug is needed in the meantime when which cassette 20 becomes empty, as mentioned above, about the printer 10 applicable in that case, the cassette exchange work etc. which are pulled out from the envelope-for-drug printer 30 are done, but. Even if the printer 10 is pulled out in that case, the transportation belt 42 grade of a corresponding section remains in the case 31, and is operating, and all the carrying functions are still maintained.

[0074]In that case, control management by the precedence assignment routine 35b and the discharge synchronous control routine 35c is also continued to other printers 10 except for the printer 10 currently pulled out. And while the printer 10 besides these carries out parallel operation, if the envelope for drug 1 printed by them is required, it is made to stand by by holding mechanism, and they are appropriately collected so that the envelope for drug 1 of the

classification which is taken out by the conveyer style to the tray 2 and changes from the taking-out mouth 34 with them may not blend. In this way, since all possible parallel processing irrespective of whether which printer 10 is pulled out is continued, the printing processing and the collection processing to classify to the envelope for drug 1 can be performed efficiently.

[0075]

[The 2nd example] The envelope-for-drug printer which showed drawing 9 (a) the vertical mimetic diagram is different from the printer of the 1st example mentioned above at the point set after the cassette 20 has inclined to the body part 10. Drawing 9 (a) supports drawing 4 (b) mentioned above. In order for any cassette 20 to incline as it separates by both side, and for the upper bed part of both the cassettes 20 to maintain the state in connection with this, The opening 13 and ** implement 14 grade to each cassette 20 are also provided in the place where only the part corresponding to inclination of the cassette 20 shifted, and are formed in the suiting shape.

[0076] But the grade of the inclination is suppressed so that the longest distance W1 covering both cassettes may not exceed the width W of the case 11. As for the envelope-for-drug printer for which the vertical mimetic diagram was shown in drawing 9 (b), although the upper and lower sides also arranged a total of four sets in two steps for such envelope-for-drug printers 10 and 20 in all directions by two right and left, the slide rail 33 was attached as much as possible to the door post of the case 31. Drawing 9 (b) supports drawing 1 (b) mentioned above.

[0077] In this case, since the cassette 20 inclines, even when the printer body part 10 is installed in high places, such as the upper row, clearing work of the cassette 20 can be performed comfortably. Since the cassette 20 is settled in the breadth of the case 11, when two or more sets of the printers 10 are stored in the case 31, it can install densely. The angles of gradient of the cassette 20 may differ by right and left, and it may be made to make one of the cassettes 20 incline.

[0078]

[Modification(s)] Although the above-mentioned example showed the case where only the four printers 10 were carried, the number of loading of the printer 10 may be restricted to this, there may not be, and may be two sets, three sets, or five sets or more. [any] Two steps of not only

upper and lower sides but three steps or more may be sufficient. The number on a par with right and left is also the same. Although the same may be said of the cassette 20 with which the printer 10 is equipped and the above-mentioned example showed the case where each printer 10 was equipped with the two cassettes 20, the number of wearing of the cassette 20 may be restricted to this, there may not be, and may be one piece or three pieces or more. [any] The numbers of wearing of the cassette 20 may differ every printer 10.

[0079] In the above-mentioned example, although connection with the main controller 35, the controller 18, the motor 44a, etc. is made individually, there is no necessity of requiring the connection wiring itself independently if independent control is possible, and as long as restrictions of cost etc. are clearable, common connection may be carried out with Ethernet etc. Although the tray 2 which receives the taken-out envelope for drug 1 showed only one case, it is good not only this but to install the elevator unit which stores many trays 2 and moves up and down, the sorter unit provided with two or more shelf boards which receive the envelope for drug 1 instead of the tray 2, etc.

[0080] The conveyer style is possible not only for a band conveyor but the thing for which a bucket and an arm are used for the whole in part, and may be further constituted combining a shot etc. A conveyer style may be constituted so that not only joining by the intervention of a thing with a level vertical thing but a vertical thing may join via a level thing.

[0081] Although holding mechanism showed what combined the transfer guides 43 and the transfer roller 44, It may embody by a means for this to be only an example, for example, to adsorb the non-printing face of the envelope for drug 1, etc., and to hold them using the combination of a driving roller and a follower roller, the combination of the movable plate which interrupts the fall by opening and closing if the natural fall of the envelope for drug 1 is possible temporarily, a blower, etc.

[0082] Although the example which used the roller was shown, the envelope-for-drug delivery mechanism 15 in the printer 10 is restricted to this, there is, and as long as it can convey and transport an envelope for drug, it may consist of above-mentioned examples using a belt, an arm, etc. [no] Not only built-in but external may be sufficient as the controller 18, and it may be shared with other devices. On

the contrary, the main controller 35 may be built not only in external but in the case 31.

[0083] In the above-mentioned example, while the envelope-for-drug supporting plate 29 of drawing 7 (b) had maintained the vertical state, parallel translation shall be carried out, but it transforms shortening slight length of the tip part 28c in the interlock plate 28 etc., and may be made for the rear part 29d to move the envelope-for-drug supporting plate 29 to an eye fewer than the movement magnitude of the claw part 29a. Although it was made to be attached in the envelope-for-drug supporting plate 29, as long as a sliding plate does not have trouble in movement of the envelope-for-drug supporting plate 29, it may be attached to the rotor plate 27, and as long as there is no trouble in movement of the movable plates 27-29, it may be attached to the box part 21. It is not necessary to form a sliding plate with the size of the envelope for drug 1, etc.

[0084]

[Effect of the Invention] If it is in the envelope-for-drug preparation device of this invention so that clearly from the above explanation, By control of maintenance having temporarily [envelope-for-drug] been made to be performed on the occasion of the parallel operation of a printer, the situation where envelope-for-drug collection is kept waiting decreases, and even if a conveyer style is simple, there is an advantageous effect that the throughput of envelope-for-drug processing was able to be raised.

[Translation done.]

JAPANESE

[JP,2000-116752,A]

CLAIMS DETAILED DESCRIPTION TECHNICAL
FIELD PRIOR ART EFFECT OF THE INVENTION
TECHNICAL PROBLEM MEANS EXAMPLE
DESCRIPTION OF DRAWINGS DRAWINGS

[Translation done.]

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- 2.**** shows the word which can not be translated.
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DESCRIPTION OF DRAWINGS

[Brief Description of the Drawings]

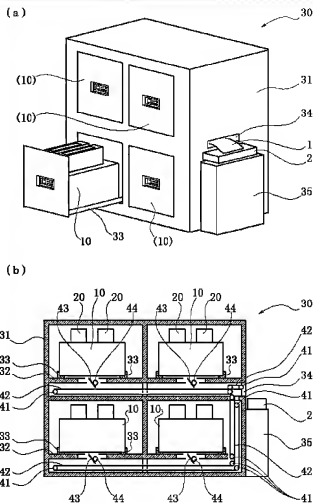
[Drawing 1] About the envelope-for-drug printer as one example of the envelope-for-drug preparation device of this invention, (a) is an appearance perspective view, and (b) is a vertical mimetic diagram.

[Drawing 2] It is an enlarged drawing about the holding mechanism circumference.

[Drawing 3] It is a block diagram of the control means relation.

[Drawing 4] About the printer used for it, (a) is an appearance perspective view, and (b) is a vertical mimetic diagram.

[Drawing 5] It is a figure in which (a) is a deployment perspective view of the important section, (b) and (c) are the figures showing the storage condition of the envelope for drug to a cassette, and (d) and (e) show the mounting

Drawing selection **Representative draw**

[Translation done.]

situation of the cassette to a body part about the cassette used for the printer.

[Drawing 6] It is a figure in which (a) is those perspective views and (b) - (d) shows those operating states about the movable plate with which it is equipped in the cassette.

[Drawing 7] (a) is an outline view with a square bottom of an envelope for drug, (b) is a perspective view of the suitable movable plate for the kind of envelope for drug, and (c) and (d) are the figures showing the operating state.

[Drawing 8] (a) is an outline view with a horizontal gore of an envelope for drug, (b) is a perspective view of the suitable movable plate for the kind of envelope for drug, and (c) and (d) are the figures showing the operating state.

[Drawing 9] About the envelope-for-drug printer as the 2nd example of the envelope-for-drug preparation device of this invention, (a) is a vertical mimetic diagram of a printer, and (b) is a vertical mimetic diagram of the whole device.

[Description of Notations]

1 Envelope for drug

1a Square bottom

1b Horizontal gore

2 Tray (an envelope-for-drug receiver, a stocker container, an envelope-for-drug receiving box)

10 Printer (body part of an envelope-for-drug feed unit)

11 Case

12 Navigational panel

13 Opening (corresponding point with a detaching part)

14 ** implement (an attitude member, drive mechanism)

14a Switch (cassette detection means)

15 Envelope-for-drug delivery mechanism (drive mechanism)

15a Roller (sending-out member)

15b Guide (guidance member)

15c Roller (sending member)

15 d Platen (buffer member)

15e Guide (guidance member)

15 f Roller (discharge member)

16 Envelope-for-drug outlet

17 Print head (envelope-for-drug printing means)

17a Print driver (envelope-for-drug printing means)

18 Controller (control section of a printer)

20 Cassette (cassette of an envelope-for-drug feed unit)

21 Box part (Minae housing soma)

21a Bottom

21b Round hole (pivotal supporting part)

21c Round hole (pivotal supporting part)
 21 d Right face (side)
 21e Oblong hole (lock part)
 21 f Notch (** implement admission port)
 21 g Left surface (side)
 22 Front face (the side, detaching part)
 23 Back opening (an open side, an opposed face)
 24 Handle
 25 Covering device (storage envelope-for-drug covering section)
 25a Round hole (pivotal supporting part)
 25b Projecting part (handle corresponding point)
 25c Notch (sending-out member admission port)
 27 Rotor plate (the 1st movable plate)
 27a Round hole (a center of rotation, a pivotal supporting part)
 27b Mating part
 27c Tip part (flexible region)
 27 d Oblong hole (lock part)
 28 Interlock plate (the 1st movable plate)
 28a Claw part (lock part)
 28b Mating part
 28c Tip part (a contact part, a flexible region)
 29 Envelope-for-drug supporting plate (the 2nd movable plate)
 29a Claw part (lock part)
 29b Tip part (envelope-for-drug extrusion part)
 29c Pars intermedia
 29 d Rear part
 30 Envelope-for-drug printer (envelope-for-drug preparation device)
 31 Case
 32 Shelf board
 33 Slide rail (drawer member)
 34 Taking-out mouth
 35 Main controller (control device)
 35a Queuing (FIFO of envelope-for-drug printed information)
 35b Precedence assignment routine
 35c Discharge synchronous control routine
 41 Transportation roller (a transportation belt actuator, a conveyer style)
 41a Motor (transportation roller actuator)
 42 Transportation belt (an endless ** belt, an envelope-for-drug transfer implement, a conveyer style)
 43 Transfer guides (a waiting means, holding mechanism,

conveyer style)

44 Transfer roller (a waiting means, holding mechanism,
conveyer style)

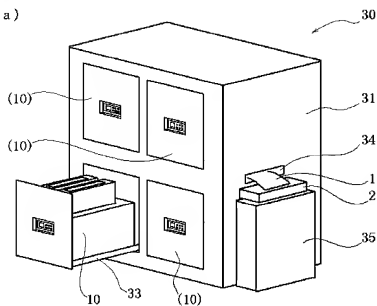
44a Motor (transfer roller actuator)

45 Photosensor (discharge envelope-for-drug sensor)

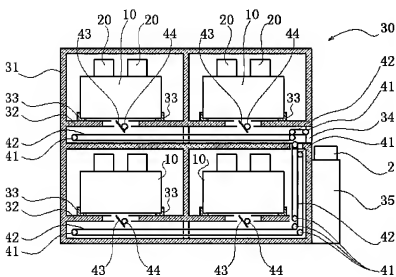
50 Host computer (processing unit of prescription data)

[Translation done.]

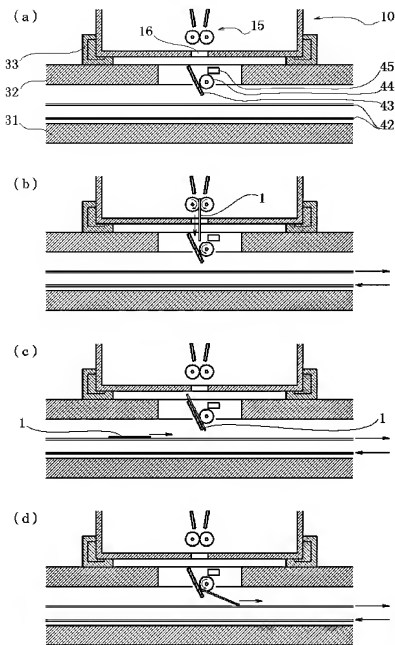
(a)



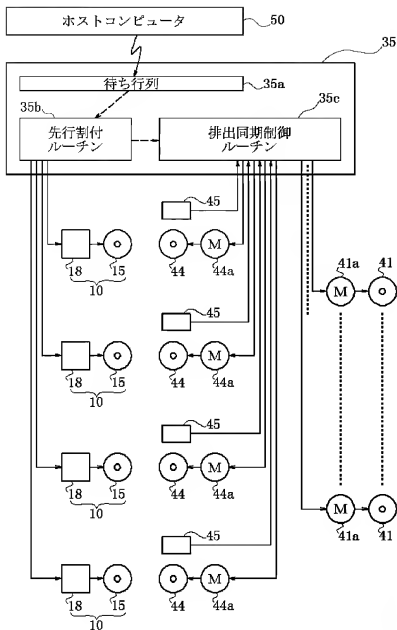
(b)



[Drawing 2]

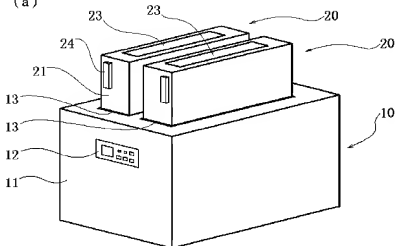


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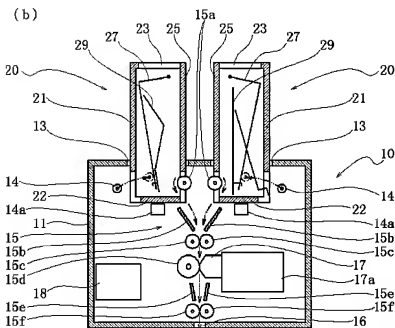


[Drawing 4]

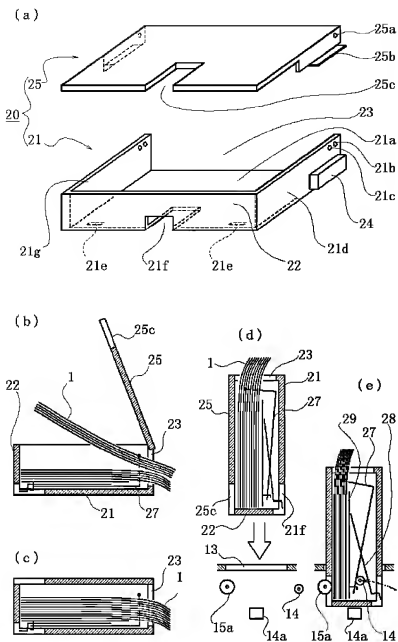
(a)



(b)

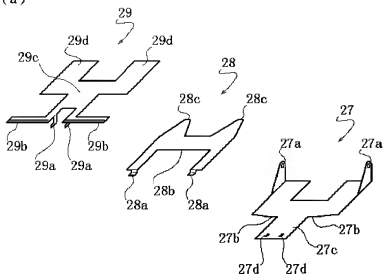


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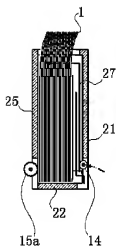


[Drawing 6]

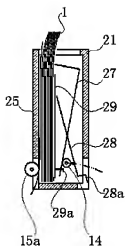
(a)



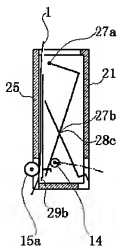
(b)



(c)

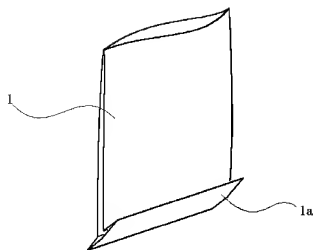


(d)

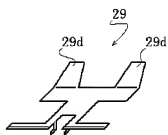


[Drawing 7]

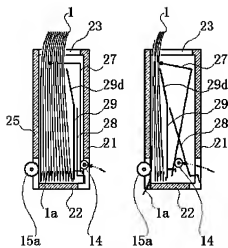
(a)



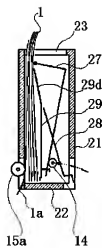
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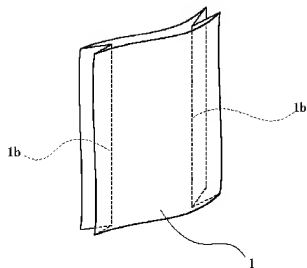
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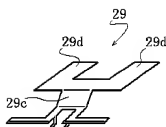
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[Drawing 8]

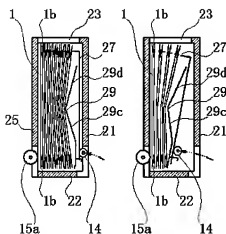
(a)



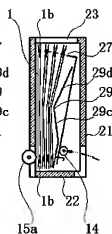
(b)



(c)

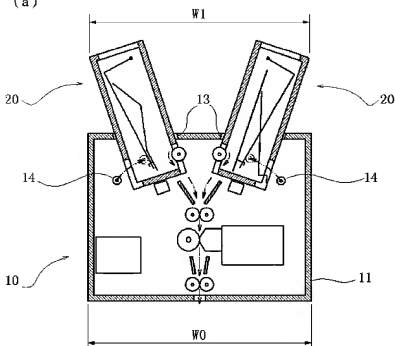


(d)

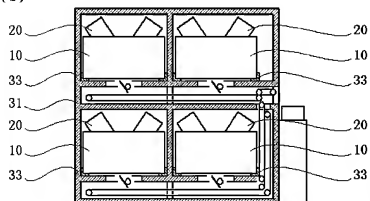


[Drawing 9]

(a)



(b)



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